

WRAIR'S RULES FOR TIME ZONE TRAVEL



One Time Zone = One Day of Recovery

We have body clocks in our brain, muscles, heart, and liver that keep hormonal and bodily rhythms aligned with the light-dark cycles and 24-hour day.



Eastward Travel Harder Than Westward

It is easier for you to stay up later when going east. When going west it is easier for you to wake up earlier, however, your sleep may be more at risk for disruption.



Bank Sleep Ahead of Time

Sleep loss with long flights is inevitable. Sleep is like a bank account. The more you put in, the more you can take out. Sleeping more prior to sleep loss can help combat its negative effects.



Sunlight

- Minimize at Night
→ Sleep mask, blackout curtains
- Maximize at Day
→ No sunglasses in the morning
- The Most Powerful Re-Setter of Body Clocks



Lifestyle

- 20 - 30 min of light within the first hour of waking up
- 30 min exercise in morning
- 60 min relaxation before bed (avoid electronics)
- Avoid alcohol/high fat and high sugar foods

Herbal Remedies

- Valerian Root - 120 - 200 mg
- Magnesium - 250 mg
- NatureMade[®] is USP verified

Caffeine

- An 8 oz cup of coffee has on average ~95 mg
- Take 200 mg of caffeine every four hours as needed to maintain alertness. Discontinue 6 hours before bed.



WRAIR-Developed Gum

- 100 mg per piece
- Acts within ~10 min

Hypnotics

- Lunesta – If you have 8 hours to sleep
- Ambien – If you have 8 hours to sleep
- Sonata – If you have 4 hours to sleep or if you awaken during the middle of the night



Melatonin

3 mg an hour before bed

Optimize Your Daily Sleep Routine With These Tips



Set a bedtime

When setting a bedtime, backward plan to set the appropriate number of hours of sleep you need. This ensures your ability to have adequate time to wind down, bathe, brush your teeth, and prepare for the next day.



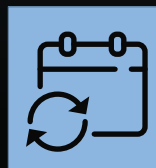
Relax and wind down

Give yourself 30–60 minutes every night to transition to sleep. The process of winding down for the night may include a warm bath or shower, listening to relaxing music, or reading books.



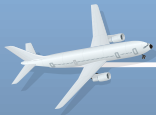
Prepare your sleep area

Your sleep area should be dark, cool, and quiet. Use room darkening curtains or blinds to block out distracting light. Have soft ear plugs or soothing white noise to assist with sleeping.



Incorporate good sleep habits into your bedtime routine

Establishing a bedtime routine helps you get quality sleep. Quality sleep supports your ability to be disciplined and to think clearly in order to meet all of your responsibilities as a Soldier, family member, and friend.



WRAIR'S JET LAG MANAGEMENT TIPS




WHILE TRAVELING

- 1 | Time your activities (eating, sleeping, getting light) based on your destination time zone.
- 2 | For short trips (e.g. less than 2 days), avoid adapting to the new time zone. Keep sleep, activity, eating schedule to your "home" time zone.

Below are a few tips you can do at your local time zone on the day of travel based on the example itineraries.




Westward Travel

Example itinerary for a morning flight:
Home or Local time: Washington DC (EST)
Destination: Honolulu (HAST)

-  Avoid bright light in the early morning (close the window shade, wear dark sunglasses)
-  Avoid caffeine in the early morning
-  Nap in the early morning (eye mask and ear plugs may help during your flight)


Eastward Travel

Example itinerary for a morning flight :
Home or Local time: Washington DC (EST)
Destination: London (GMT)



-  Get bright light in the early morning (open the window shade, avoid dark sunglasses)
-  Take caffeine in the early morning
-  Avoid light in the evening (close the window shade, wear dark sunglasses)

WHEN YOU ARRIVE



- 1 | Go outside, getting daylight at your destination time will ease your shift
- 2 | Take 200 mg of caffeine every 4 hours during daylight hours at your destination as needed for alertness; Stop 6 hours before bed time
- 3 | Short naps (~20 min) may help with alertness

Below are a few tips you can do at your destination time zone on the day you arrive based on the example itinerary. Once adjusted, do  activities based on new local time.

Westward Travel

-  Try to stay up until your destination bedtime
-  Sedative and hypnotic medication may help with staying asleep

Eastward Travel

-  Take melatonin prior to bedtime (there is limited data on how melatonin interacts with other medications)
-  Sedative and hypnotic medication may help with falling asleep



DAY TO DAY

Example sleep schedule from 2200 to 0600

0600 h



wake up



sunlight in A.M. to "reset" alerting signal



exercise boosts alertness through "feel good" endorphins



caffeine acts in 20 minutes and lasts for hours

1200 h



exercise continues to boost alertness through "feel good" endorphins



caffeine continues to act in 20 minutes and lasts for hours

1600 h



napping helps reduce sleep drive and boosts day of learning and memory



refrain from consuming caffeine after 1600 hrs

2200 h



low light helps stimulate release of melatonin, which helps us fall asleep



low-level relaxing activity at night prepares our body for sleep



bed time